Attorney Docket No: 183. /2032 (Serial No.: 09/886,899)

Inventor: Lovell-Badge, et al.

Filed: June 21, 2001

Amendment and Response to Office Action

Page 2

The following Listing of the Claims will replace all prior versions and all prior listing of the claims in the present application:

Listing of the Claims:

- 1. (Currently Amended) A method for isolating a pluripotent cell which is at least partially committed to a given developmental pathway comprising the steps of:
 - (a) selecting a population of pluripotent cells;
- (b) detecting expression of a Sox gene selected from the group consisting of Sox15, Sox16 and any one of the Sox genes provided in Table 1 selected from the group consisting of: Sox21 (GenBank Accession No. AF107044); Sox14 (GenBank Accession No. 107043); Sox13 (GenBank Accession No. AB104474); Sox10 (GenBank Accession No. AJ001183); Sox22 (GenBank Accession No. U35612); Sox18 (GenBank Accession No. L35032); Sox11 (GenBank Accession No. U23752); Sox1 (GenBank Accession No. Y13436); Sox2 (GenBank Accession No. Z31560 and U12532); Sox3 (GenBank Accession No. X94125); Sox4 (GenBank Accession No. X70683); Sox5 (GenBank Accession No. S83306); Sox6 (GenBank Accession No. U32614); Sox7 (GenBank Accession No. AI15903/P40646); Sox9 (GenBank Accession No. S74504/5/6); Sox12 (GenBank Accession No. U70442); Sox13 (GenBank Accession No. AB006329); Sox15 (GenBank Accession No. AB104474); Sox16 (GenBank Accession No. L29084); Sox17 (GenBank Accession No. D49473); Sox19 (GenBank Accession No. X98368); Sox22 (GenBank Accession No. U35612);
 - (c) sorting the cells according to Sox gene expression; and
 - (d) isolating those cells which express a Sox gene.
- 2. (Previously Amended) The method of claim 1, wherein said population of cells is derived from CNS tissue.
- 3. (Previously Amended) The method of claim 1, wherein said population of cells is derived from a cell culture.

Attorney Docket No: 1835 ... 2032 (Serial No.: 09/886,899)

Inventor: Lovell-Badge, et al.

Filed: June 21, 2001

Amendment and Response to Office Action

Page 3

- 4. (Previously Amended) The method of claim 1, wherein said Sox gene expression is detected by nucleic acid hybridization.
- 5. (Previously Amended) The method of claim 1, wherein said *Sox* gene expression is detected by binding of a SOX polypeptide or a SOX nucleic acid corresponding to mRNA to a detectable ligand.
- 6. (Previously Amended) The method of claim 5, wherein the detectable ligand is a labeled immunoglobulin.
- 7. (Previously Amended) The method of claim 5, wherein said detectable ligand is a labeled oligonucleotide complementary to Sox mRNA.
- 8. (Currently Amended) The method of claim 1, wherein said Sox gene expression is detected by FACS analysis staining for β -galactosidase activity.
- 9. (Withdrawn) A method for isolating a desired cell type from a population of cells, comprising the steps of: (a) transfecting the population of cells with a genetic construct comprising a coding sequence encoding a detectable marker operatively linked to control regions sensitive to modulation by a SOX polypeptide; (b) detecting the cells which express the selectable marker; and (c) sorting the cells which express the selectable marker from the population of cells.
- 10. (Withdrawn) A method for isolating a neuroblastic cell from a population of cells, comprising the steps of: (a) transfecting the population of cells with a genetic construct comprising a coding sequence encoding a detectable marker operatively linked to a control sequence which is transactivatable by a SOX polypeptide; (b) detecting the cells which express the selectable marker; and (c) sorting the cells which express the selectable marker from the population of cells.
- 11. (Withdrawn) A method according to claim 9 or claim 10, wherein the selectable marker is a fluorescent or luminescent polypeptide.

Attorney Docket No: 18390/2032 (Serial No.: 09/886,899)

Inventor: Lovell-Badge, et al.

Filed: June 21, 2001

Amendment and Response to Office Action

Page 4

12. (Withdrawn) A method according to claim 9 or claim 10, wherein the selectable marker is a polypeptide detectable at the surface of the cell.

- 13. (Withdrawn) A method for producing a cell committed to a specified lineage, comprising the steps of: (a) transfecting a pluripotent stem cell with a genetic construct comprising a coding sequence expressing a SOX polypeptide; (b) culturing the stem cells in order to differentiate them into neural cells; and (c) isolating the neural cells thereby produced.
- 14. (Withdrawn) A method according to claim 15, wherein the Sox sequence is operatively linked to an inducible promoter.
- 15. (Withdrawn) A method according to claim 13 or claim 14, wherein the cell is further transfected with a vector comprising a sequence encoding a regulator which modulates the expression of the Sox sequence.
- 16. (Previously Amended) The method of claim 1, wherein said Sox gene is a member of Sox Group A.
- 17. (Previously Amended) The method of claim 16, wherein said Sox gene is Sox1 or Sox2.